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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,518	10/04/2005	Yuriy Sergeevich Volkov	P07129US00	6161
22885 7590 10/07/2008 MCKEE, VOORHEES & SEASE, P.L.C. 801 GRAND AVENUE SUITE 3200 DES MOINES, IA 50309-2721				
			EXAMINER WALTERS JR, ROBERT S	
			ART UNIT 1792	PAPER NUMBER
			MAIL DATE 10/07/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/529,518

Applicant(s)

VOLKOV ET AL.

Examiner

ROBERT S. WALTERS JR

Art Unit

1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 21-27 and 29-35 is/are pending in the application.
- 4a) Of the above claim(s) 1-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-27 and 29-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB-08)
Paper No(s)/Mail Date 6/18/2008
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Status of Application

Claims 1-8 are withdrawn, claims 9-20 and 28 are cancelled, claims 21-27 are amended, and claims 29-35 have been added.

Response to Arguments

Applicant's arguments with respect to claims 21-27 and new claims 29-35 have been considered but are moot in view of the new ground(s) of rejection.

Information Disclosure Statement

The information disclosure statement filed 6/18/2008 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Objections

Claims 32 and 33 are objected to because of the following informalities: The material being maintained and controlled in claims 32 and 33 is the coating melt, not the coating product. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claim 35 recites the limitation "the pressure control means". There is insufficient antecedent basis for this limitation in the claim. For examination purposes, this claim has been construed to be the device of claim 29 further comprising an outlet in an upper portion of the camera above the melt level of the camera to release pressure from the camera and an inlet in the tank above the melt level of the tank to increase pressure in the tank.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 21-24 and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knapp (U.S. Pat. No. 3354864) in view of Krenzel et al. (U.S. Pat. No. 5860204, hereinafter Krenzel).

I. Regarding claims 21-22 and 26-27, Knapp teaches a device for applying a coating on a lengthy product, such as tubing or wire (column 1, lines 8-13), by plunging the product into a melt of the coating (see Figure 2) comprising:

- (a) a tank (element 34 of Figure 2) with the melt, with means for creating excessive pressure (column 3, lines 28-47) via an inlet in the tank above the melt level of the tank (see column 3, lines 28-47 and element 46 of Figure 1);
- (b) a camera for applying the coating melt which is above the tank and having opposite input and output passages (see element 10 of Figure 2), where the camera is provided in its lower part with an intake vertical passage plunged into the tank (element 54 of Figure 2), and has input and output passages in the side walls (see Figure 2);

whereby the pressure in the tank is greater than the pressure in the camera such that the melt moves upwardly from tank through the vertical passage to the camera (column 3, lines 28-47). Knapp further teaches that the camera is provided with melt heating means (column 4, lines 1-4).

Knapp fails to teach the camera having an outlet above the melt level in the camera to release pressure from the camera as the pressure control means. Krengel1 teaches a similar device for applying a coating to a lengthy article, wherein there is an outlet above the melt level in the camera for pressure discharge (see Figure 1, the openings above the melt level in tank 108), whereby the pressure in the tank and camera can be controlled (column 9, lines 51-53). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Knapp's device to include an outlet above the melt level of the camera according to Krengel1 to further control the pressure in the system. One would have been motivated to make this modification as the use of both a means for introducing pressure to the tank and discharging pressure from the camera would allow for very careful control of the melt level in the camera. Further, one of ordinary skill in the art at the time of the invention could have made this modification with a reasonable expectation of success and the predictable result of providing two means for controlling the level of the melt in the camera as well as two means for helping to move the melt through the passage to the camera.

II. Regarding, claim 23, Knapp in view of Krengel1 teach all the limitations of claim 21 (see above) including the camera having melt heating means, but fails to teach the tank having melt heating means. Knapp in view of Krengel1 clearly envisage that the tank has melt heating means, as Knapp teaches that the tank holds molten metal (column 3, lines 32-40) and to ensure

that the metal was molten would necessitate that the tank has melt heating means. Alternatively, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Knapp in view of Kregel1 to include melt heating means in the tank. One would have been motivated to make this modification to ensure that the melt could be properly transferred to the camera without freezing and clogging the system.

III. Regarding claim 24, Knapp in view of Kregel1 teach all the limitations of claim 21, however fail to teach maintaining the pressure condition in the camera as claimed. However, it is well known that pressure differentials can be used to contain materials in given locations. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Knapp in view of Kregel1 to have the atmospheric pressure greater than the combined pressure of the camera and the melt column above the lower side of the passage. One would have been motivated to make this modification as this would help to ensure that the coating material in the camera remained at the appropriate level and would stop excess coating material from escaping through the openings thereby helping to provide the article with a more even coating with little melt waste and loss.

3. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Knapp in view of Kregel1 and further in view of Pereira (U.S. Pat. No. 4860820).

Regarding claim 25, Knapp in view of Kregel1 teach all the limitations of claim 21, however fail to teach the camera having level control means for controlling the level of the melt

in the camera. Pereira teaches a detector for detecting the presence of molten metal (abstract) and thereby applying pressure in response to the detector (abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Knapp in view of Kregell's device to include the sensor taught by Pereira as a level control means sensor to control the level of the melt in the camera. One would have been motivated to make this modification as it would allow for careful control of the level of melt in the camera and ensure that the article to be coated was completely immersed in the coating melt as it passed through the camera.

4. Claims 29, 31-32 and 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kregel et al. (U.S. Pat. No. 3259148, hereinafter referred to as Kregel2).

Regarding claims 29, 31-32 and 34-35, Kregel2 teaches a device for coating a lengthy product (see Figure 2 and column 6, lines 43-61), the product being a steel tube (column 1, lines 19-25) comprising a tank with melted coating material (see elements 132 of Figure 2) with a camera above the tank (see element 122 in Figure 2) and a passage between the tank and camera for supplying coating material from the tank into the camera (column 6, lines 49-55 and element 130 of Figure 2), with the camera having a product inlet and outlet, located in the side walls of the camera (see Figure 2) both below the level of coating material in the camera such that the product moving through the inlet and outlet is coated with the melted coating material (see Figure 2 with the zinc level illustrated above the inlet and outlets which are elements 124 and 126). Kregel2 further teaches that the camera and tank have means for maintaining the coating

product in a melted state (see column 7, lines 6-10) as well as a drain and pump for controlling the level of coating product in the camera (column 6, lines 49-55 and column 6, lines 62-73).

Krengel2 also teaches an inlet above the melt level of the tank that is capable of increasing the pressure in the tank (see element 114 of Figure 2, which allows for the introduction of gas).

Krengel2 fails to teach the camera having an outlet in the upper portion above the melt level to release pressure in the camera such that it is less than atmospheric to prevent leakage of the melted coating material through the inlet and outlet. However, it is well known that pressure differentials can be used to contain materials in given locations. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Krengel2 to include an outlet above the melt level of the camera to release pressure such that the pressure in the camera becomes less than the atmospheric pressure to insure that coated material does not flow through the inlet and outlet. One would have been motivated to make this modification as this would help to ensure that the coating material in the camera remained at the appropriate level and would stop excess coating material from escaping through the openings thereby helping to provide the article with a more even coating with little melt waste and loss.

5. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krengel2 in view of Knapp.

Regarding claim 30, Krengel2 teaches all the elements of claim 29, however fails to teach the camera being at a lower pressure than the tank to cause melted coating material to flow upwardly through the passage from the tank to the camera. However, Knapp teaches a means of

supplying melt from a lower tank to an upper tank through a passage between the two tanks, by increasing pressure in the lower tank, such that the upper tank is at a lower pressure than the lower tank (column 3, lines 28-47). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kregel2's device by holding the camera at a lower pressure than the tank to cause melted coating material to flow upwards into the camera as taught by Knapp. One would have been motivated to make this modification as this would alleviate the need for mechanical pumps which have limited lifetimes in the melt and simplify the process of transporting the melt from the tank to the camera.

6. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kregel2 in view of Pereira.

Regarding claim 33, Kregel2 teaches all the limitations of claim 29, however fails to teach the camera having means for controlling the level of the coating melt in the camera. Pereira teaches a detector for detecting the presence of molten metal (abstract) and thereby applying pressure in response to the detector (abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Kregel2's device to include the sensor taught by Pereira as a level control means sensor to control the level of the melt in the camera. One would have been motivated to make this modification as it would allow for careful control of the level of melt in the camera and ensure that the article to be coated was completely immersed in the coating melt as it passed through the camera.

Conclusion

Claims 21-27 and 29-35 are rejected.

No claim is allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT S. WALTERS JR whose telephone number is (571)270-5351. The examiner can normally be reached on Monday-Thursday, 6:30am to 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ROBERT S. WALTERS JR/
October 1, 2008
Examiner, Art Unit 1792

/Michael Barr/

Supervisory Patent Examiner, Art Unit 1792